IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATIONS : T. NOMURA et al.
SERIAL NO. : 10/684,511
FILED : OCTOBER 15, 2003.
FOR : FUEL SYSTEM HAVING EXCELLENT GASOLINE BARRIER PROPERTY
ART UNIT : 1772
EXAMINER : Marc A. Patterson

DECLARATION UNDER 37 CFR 1.132

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

I, Shun Ogawa of 6-2 Higashiyawata 5-chome, Hiratuska-shi, Kanagawa, Japan, declare that;

1. I graduated master course of engineering research department of Yokohama National University in March 2000 and entered Mitsubishi Gas Chemical Company, Inc. in April 2000. I have been in charge of research and development of urethane resin and epoxy resin in Hiratsuka Research Laboratory from May 2003, and have held the position up to the present time.

2. I am familiar with the subject matter disclosed in the Application because I have been in charge of research and development of urethane resin and epoxy resin concerning the present invention and worked with Takeshi KOYAMA who is the one of the named inventors of the present U.S. Patent Application as identified above from May 2003 to June 2008.

3. I have a good knowledge of the English language and have read and understand the application papers and the Examiner's Official Action as well as the reference cited therein in the prosecution of above identified application.

4. Experiment.

Object of Experiment

The following experiment was carried out, in order to prove that general polyurethane film is permeable to gasoline in liquid phase and in gas phase though the Examiner contented that Kay discloses impermeability of polyurethane film to liquid gasoline.

Procedures of Experiment

Gasoline permeability coefficients by gas phase method and by liquid phase method were measured in a coating layer formed by curing urethane resin composition comprising an active hydrogen-containing compound (A) and an organic polyisocyanate compound (B) wherein polyesterpolyol (F18-62, manufactured by ADEKA Co., Ltd.) is used as an active hydrogen-containing compound (A), trimethylol propane adducts of isophorone diisocyanate (D-140N, manufactured by Mitsui Chemical polyurethane Co., Ltd) or trimethylol propane adducts of hexamethylenediisocyanate (Sumidule HT, manufactured by Sumitomo Chemical Bayer Co., Ltd) are used as an organic polyisocyanate compound (B) in the Examples of the present invention as following.

Case A (Example A)

A coating film was prepared and evaluated by the same methods as in Example 1 of the present invention, except that 100 parts by weight of Fl8-62 was substituted for active hydrogen-containing compound A and 79.8 parts by weight of Sumidule HT was substituted for Organic Polyisocianate Compound A.

Case B (Example B)

A coating film was prepared and evaluated by the same methods as in Example 1 of the present invention, except that 100 parts by weight of Fl8-62 was substituted for active hydrogen-containing compound A and 95.5 parts by weight of D-140N was substituted for Organic Polyisocianate Compound A.

Results of the Experiment;

The gasoline permeability coefficient (g・mm/m^2・day) in gas phase method and in liquid phase method are shown below.

Case	Gasoline permeability coefficient (g・mm/m^2・day)	
	in gas phase method	in liquid phase method
A (Example A)	51.3	55.2
B (Example B)	77.4	78.6

Consideration:

According to the above Table, the gasoline permeability coefficients in gas phase method and in liquid phase method of case A and case B were obtained. The values of these gasoline permeability coefficients are larger than the value of the gasoline permeability coefficients of Example 1 of the present invention.

The materials of FI8-62, D-140N and Sumidule HT are generally used for the production of the general industrial polyurethane for adhesive, paint, wound dressing and etc.

Then it is proved that general polyurethane is permeable to gasoline though the Examiner contented that Kay discloses impermeability of the polyurethane to liquid gasoline.

The same performance as the present invention is confirmed in above data that the gasoline permeability coefficients in liquid phase method are larger than the gasoline permeability coefficients in gas phase method.

So, it is confirmed from above data and the data of the examples of the present invention that the permeability of gasoline through polyurethane is different from the permeability of water which is permeable to vapor and is impermeable to liquid water according to Kay.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and beliefs are to be true; and further that these statement were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Shun Ogawa

Shun Ogawa

Date : May 25 , 2009